

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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Work on "Tonne" Equipment in the USSR

1. [redacted] in Leningrad at NII 380 (Scientific Research Institute 380),
the synchronizing impulse generator 25X1

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25 YEAR
RE-REVIEW

STATE	# <input checked="" type="checkbox"/> ARMY	# <input checked="" type="checkbox"/> NAVY	# <input checked="" type="checkbox"/> AIR	# <input checked="" type="checkbox"/> FBI	AEC	ORR/I ev	x SI /P&E ev *
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[redacted] This apparatus was used in "Tonne" equipment but could also be used in normal civilian television equipment. Since the military prototype was much smaller, lighter, and more stable than the civilian prototype, this military model was developed for use in the East German television system [redacted] 25X1

[redacted] 25X1

2. [redacted] development work on the synchronizing impulse generator in the USSR, [redacted] The Soviet development had 30% fewer tubes [redacted], a fact about which the Soviets were overjoyed. Two of these improved sets were built [redacted] in the Institute (April 1948) and the end of 1949 or the beginning of 1950 when Voronov, the Soviet department head, received a Stalin prize for the new impulse generator. [redacted] four more of these new type synchronizing impulse generators in the laboratory [redacted] 25X1

[redacted] the cost for development of four such generators, from initial design work through the pre-production stage, was between 1,000,000 and 1,200,000 rubles. 25X1

3. [redacted] the Soviet aim for the "Tonne" system is to get a basic system for further development. It is noteworthy that the "Tonne" equipment was known in the USSR before the German specialists arrived there. Certainly Sakharov had picked up "Tonne" units in Tannwald after the war, but [redacted] the Soviets had obtained a "Tonne" system through their espionage net during the war and that work started on it at that time. 25X1

4. [redacted] the models of the "Tonne" and "Seedorf" equipments will use only Soviet-built components. A process of "Sovietizing" all of the components in the equipment was the only development work that had actually been done with the German equipment. Since there was much that could have been done with the "Tonne" system, [redacted] the Soviets are not capable of developing a television guidance system with advanced capabilities. The Soviet engineers that were doing work on the system at NII 380 will prove a further hindrance to any development of a new system, for they were a pretty helpless lot. [redacted] The most minor problems such as every German engineer learns to solve in school prove to be too challenging for the Soviet engineers. [redacted] 25X1

[redacted] 25X1

*Secret Department of NII 380

5. Regarding the "Secret Department" of Institute 380, [redacted] it was working on the "Tonne" and "Seedorf" equipment. [redacted] 25X1

[redacted] Certainly the civilian television department at [redacted]

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NII 380 was directly subordinate to the Ministry of Communications Equipment Industry, but [] even the Soviets working there do not know who controls the "Secret Department". As an example of this, [] one of the Soviet engineers wanted to leave the department and go elsewhere to work. After inquiring as to the possibility for making such a transfer and finding that no one actually in the Institute had the authority to order such a transfer, he finally had to address his application to Stalin personally.

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6. Among the personnel attached to the Institute, [] ZABRYKIN, who was first in charge of the development of "Kippgeraete" and impulse generators. []

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[] he had partially fulfilled the requirements for the title of "Doctor". (It is much harder to obtain this title in the USSR than it is in Germany.) []

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ZABRYKIN'S successor. [] VORONOV, who was

Test Equipment at NII 380

7. When the German group first came to the USSR [] found a decided shortage of test equipment. This situation improved greatly []

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[] Special test equipment was developed in the USSR by LEGLER /Dipl. Ing. Ernst LEGLER,

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8. Test equipment [] was very good. The Soviets had a keen sense for selecting from the literature those pieces of test equipment which would best serve their purposes. Their copies were true and they understood the best principles to be used in making this equipment.

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9. []

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Soviet Servomechanisms Development

10. []

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[] one piece of information [] may indicate that the Soviets are doing work on military applications of servomechanisms. In 1939 Germany had a so-called Spiral (or S-) Camera under development. This camera's iconoscope had a spiral sweep pattern and the camera was used in a target seeking system. A Soviet engineer []

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[] was very knowledgeable on the details of the system []

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Production of Iconoscopes

11. [redacted] the yearly plan for production of iconoscopes was to be 50,000 units per year.
[redacted] this figure is highly speculative.

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[redacted]
the Soviets do seem
to have a plentiful supply for experimentation.

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Planning of Development Projects in the USSRMotivations

12. [redacted] all developments in the electronics field in the USSR are motivated first by political plans and second by military plans. [redacted] the political elements in the USSR were in favor of releasing the German specialists after they had been in the USSR for only one year but that the military planners would not go along with this idea. On the other hand, the military did not want the Germans to work on strictly military projects.

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13. Colonel SILESNOV, the Soviet who brought the Germans to the USSR, [redacted] had appeared before a commission in 1946 and stated that he could, for 1/5th of the budget contemplated for this project, assemble a group of German specialists and develop a Soviet television system. On the strength of his argument he was given blanket authority by the commission to bring the Germans to the USSR for such work. [redacted] all of the Germans worked on civilian developments.

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14. [redacted] the Soviets are so interested in developing a civil television network, [redacted] as a propaganda weapon. They even dream of establishing an international television network.

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15. [redacted]

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Planning Procedure

16. A Soviet engineer or scientist first receives a directive from a high level commission to prepare the theoretical layout of some piece of equipment. He starts the work by preparing a report on the theoretical considerations involved. This must include a very comprehensive review of the literature available on the subject, both the foreign and the domestic. This report must also go into the advantages and disadvantages of the different systems available and must finally make a judgment as to which system should be used in the USSR and why. This report is forwarded to the Ministry.
17. The Ministry makes the decision as to whether or not a sample of the device or equipment should be prepared. This is no more than a breadboard model to inquire into the relative advantages of particular components and to see if the theory chosen is the best one for the job. This model is checked and tested and a report on its performance is sent to the Ministry.
18. If the Ministry is satisfied with the report, the development engineer receives orders to build a pre-production model. This time, when the model is finished, a very elaborate report must be included with the final sample. It must be at least 100 pages in length and include many photographs. It must also include all cost figures on the development and production of the model, the manhours that were involved in making it, and all other production details which came up in building the sample submitted. Furthermore, in addition to all of the above details, the development engineer must include suggestions on how series production of the article can be accomplished.
19. This final report is forwarded to a special commission. This commission is composed of a group of eminently qualified men and includes people in the Ministry, people from universities, and people from other development institutes. The commission does not have formal sittings and is not called into a group to decide on the final report. Instead, each member gets a copy of the report and must make separate comments.
20. If the commission reaches a favorable decision on the report, it can then send the equipment to another institute for testing or it can meet (as in the case of large or of unusual products) and test it in the institute in which it was developed. It is at this point that the developer loses track of his work. If the test is conducted at another institute, he does not go to the tests and, in any event, never learns where the equipment was put in production, which is the final step, following recommendations of the commission.
21. [redacted] no German engineers or specialists were ever used at these test centers except when no qualified Soviets were available to pass on the quality of the sample. [redacted]

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22.

[redacted] 25X1

23.

[redacted] 25X1

1. [redacted] Comment. This is a rather general German technical term.
It can mean relaxation oscillators, saw tooth oscillators, sweep apparatus or circuits, tilting devices, or time base devices. Possibly [redacted]
[redacted] a pulse generator, [redacted] defines as a deflection device to
measure the rise of a single impulse. [redacted]

[redacted] 25X1

[redacted] 25X1

[redacted] 25X1

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